AUTHOR INDEX

Anderson, D.M., *see* Hulet, C.V. et al.
Baker, J.P., *see* Duren, S.E. et al.
Barnett, J.L., *see* Hemsworth, P.H. et al.
Beilharz, R.G. (Parkville, Vic., Australia)
Book review of *Sexual selection* 381
Blokhuis, H.J. (Beekbergen, The Netherlands)
The effect of a sudden change in floor type on pecking behaviour in chicks 65
Blokhuis, H.J. and van der Haar, J.W. (Beekbergen, The Netherlands)
Effects of floor type during rearing and of beak trimming on ground pecking and feather pecking in laying hens 359
Blouin, A., *see* DeRoth, L. et al.
Bouissou, M.F., *see* Lynch, J.J. et al.
Bryant, D.G. (St. John's, Newfoundland, Canada)
The ecological basis of behaviour 215
Canart, B., *see* Dechamps, P. et al.
Davies, H.I., *see* Lynch, J.J. et al.
De Passillé, A.M.B. (Lennoxville, Que., Canada) and Rushen, J. (Ottawa, Ont., Canada)
Suckling and teat disputes by neonatal piglets 23
Dechamps, P., Nicks, B., Canart, B. and Istasse, L. (Brussels, Belgium)
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a stanchion barn 303
Degen, A.A., Kam, M. and Rosenstrauch, A. (Beer Sheva, Israel)
Time-activity budget of ostriches (*Struthio camelus*) offered concentrate feed and maintained in outdoor pens 347
Dellmeier, G.R. (College Station, TX, U.S.A.)
Motivation in relation to the welfare of enclosed livestock 129
Delpietro, H.A. (Misiones, Argentina)
Case reports on defensive behaviour in equine and bovine subjects in response to vocalization of the common vampire bat (*Desmodus rotundus*) 377
DeRoth, L., Vermette, L., Blouin, A. and Lariviere, N. (St. Hyacinthe, Que., Canada)
Blood catecholamines in response to handling in normal and stress-susceptible swine 255
Dougherty, C.T., *see* Duren, S.E. et al.
Duren, S.E., Dougherty, C.T., Jackson, S.G. and Baker, J.P. (Lexington, KY, U.S.A.)
Modification of ingestive behavior due to exercise in yearling horses grazing orchardgrass 335
Elwin, R.L., *see* Lynch, J.J. et al.
Fell, L.R. and Shutt, D.A. (Richmond, N.S.W., Australia)
Behavioural and hormonal responses to acute surgical stress in sheep 283
Fox, M.W. (Washington, DC, U.S.A.)
Genetic engineering and animal welfare 105
Fraser, A.F. (St. John's, Newfoundland, Canada)
Editorial 93
Animal welfare practice: primary factors and objectives 159
Animal welfare theory: the keyboard of the maintenance ethosystem 177
Friend, T. (College Station, TX, U.S.A.)
Recognizing behavioral needs 151

Friendship, R.M., *see* Luescher, U.A. et al.
Green, G.C., *see* Lynch, J.J. et al.
Hansen, C., *see* Hemsworth, P.H. et al.
Hemsworth, P.H., Barnett, J.L., Tilbrook, A.J. and Hansen, C. (Werribee, Vic., Australia)
The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows 313
Henderson, R. and Stolba, A. (Zurich, Switzerland)
Incidence of oestrus and oestrous trends in lactating sows housed in different social and physical environments 235
Hinch, G.N. (Mosgiel, New Zealand)
The sucking behaviour of triplet, twin and single lambs at pasture 39
Hinch, G.N., *see* Lynch, J.J. et al.
Hulet, C.V., Anderson, D.M., Smith, J.N., Shupe, W.L., Taylor, Jr., C.A. and Murray, L.W. (Las Cruces, NM, U.S.A.)
Bonding of goats to sheep and cattle for protection from predators 261
Istasse, L., *see* Dechamps, P. et al.
Jackson, S.G., *see* Duren, S.E. et al.
Jensen, P. (Skara, Sweden)
Nest site choice and nest building of free-ranging domestic pigs due to farrow 13
Jones, R.B. (Roslin, Midlothian, Gt. Britain)
Experimenter visibility, spectacles and tonic immobility in the domestic fowl 371
Kalra, D.B., *see* Srivastava, R.S. et al.
Kam, M., *see* Degen, A.A. et al.
Langford, M.J. (St. John's, Newfoundland, Canada)
Animal welfare and human welfare 95
Lariviere, N., *see* DeRoth, L. et al.
Le Neindre, P., *see* Veissier, I. et al.
Lissemore, K.D., *see* Luescher, U.A. et al.
Luescher, U.A., Friendship, R.M., Lissemore, K.D. and McKeown, D.B. (Guelph, Ont., Canada)
Clinical ethology in food animal practice 191
Lynch, J.J., Hinch, G.N., Elwin, R.L., Green, G.C. and Davies, H.I. (Armidale, N.S.W., Australia) and Bouissou, M.F. (Nouzilly, France)
Social organization in young Merino and Merino×Border Leicester ewes 49
Lyons, D.M. (Davis, CA, U.S.A.)
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 269
Mathur, A.K., *see* Srivastava, R.S. et al.
McCall, C.A. (Storrs, CT, U.S.A.)
The effect of body condition of horses on discrimination learning abilities 327
McKeown, D.B., *see* Luescher, U.A. et al.
Murata, Y., *see* Tanida, H. et al.
Murray, L.W., *see* Hulet, C.V. et al.
Nicks, B., *see* Dechamps, P. et al.
Nicol, C.J. (Bristol, Gt. Britain)
Social influences on the comfort behaviour of laying hens 75
Paterson, A.M. (South Perth, W.A., Australia) and Pearce, G.P. (Nedlands, W.A., Australia)
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 225

Pearce, G.P., *see* Paterson, A.M. and Pearce, G.P.
Rosenstrauch, A., *see* Degen, A.A. et al.
Rushen, J., *see* De Passillé, A.M.B. and Rushen, J.
Shupe, W.L., *see* Hulet, C.V. et al.
Shutt, D.A., *see* Fell, L.R. and Shutt, D.A.
Smith, J.N., *see* Hulet, C.V. et al.
Srivastava, R.S., Mathur, A.K. and Kalra, D.B. (Rajasthan, India)
Effect of training ram hoggets on their adult sexual behaviour 295
Stolba, A., *see* Henderson, R. and Stolba, A.
Tanaka, T., *see* Tanida, H. et al.
Tanida, H., Murata, Y., Tanaka, T. and Yoshimoto, T. (Kanagawa-ken, Japan)
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire mating 245
Taylor, Jr., C.A., *see* Hulet, C.V. et al.
Tennessen, T. (Truro, Nova Scotia, Canada)
Coping with confinement — features of the environment that influence animals' ability to adapt 139
Tilbrook, A.J., *see* Hemsworth, P.H. et al.
Trallat, G., *see* Veissier, I. et al.
Van der Haar, J.W., *see* Blokhuis, H.J. and van der Haar, J.W.
Van Putten, G. (Zeist, The Netherlands)
The pig: a model for discussing animal behaviour and welfare 115
Veissier, I., Le Neindre, P. and Trillat, G. (Ceyrat, France)
The use of circadian behaviour to measure adaptation of calves to changes in their environment 1
Vermette, L., *see* DeRoth, L. et al.
Yoshimoto, T., *see* Tanida, H. et al.

SUBJECT INDEX

Adaptation
Coping with confinement — features of the environment that influence animals' ability to adapt 139
Behavioural needs
Recognizing behavioral needs 151
Behavioural responses
Behavioural and hormonal responses to acute surgical stress in sheep 283
Blood catecholamines
Blood catecholamines in response to handling in normal and stress-susceptible swine 255
Bulls
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a stanchion barn 303
Cattle
Bonding of goats to sheep and cattle for protection from predators 261
The use of circadian behaviour to measure adaptation of calves to changes in their environment 1
Chickens
Social influences on the comfort behaviour of laying hens 75
The effect of a sudden change in floor type on pecking behaviour in chicks 65
Circadian behaviour
The use of circadian behaviour to measure adaptation of calves to changes in their environment 1
Clinical ethology
Clinical ethology in food animal practice 191
Comfort behaviour
Social influences on the comfort behaviour of laying hens 75
Concentrate feed
Time-activity budget of ostriches (*Struthio camelus*) offered concentrate feed and maintained in outdoor pens 347
Confinement
Coping with confinement — features of the environment that influence animals' ability to adapt 139
Courtship behaviour
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire mating 245
Cows
The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows 313
Defensive behaviour
Case reports on defensive behaviour in equine and bovine subjects in response to vocalization of the common vampire bat (*Desmodus rotundus*) 377
Dominance
Social influences on the comfort behaviour of laying hens 75
Dominance rankings
Social organization in young Merino and Merino × Border Leicester ewes 49
Ecology
The ecological basis of behaviour 215

Ethosystem
Animal welfare theory: the keyboard of the maintenance ethosystem 177
Feather pecking
Effects of floor type during rearing and of beak trimming on ground pecking and feather pecking in laying hens 359
Feed-back regulation
Nest site choice and nest building of free-ranging domestic pigs due to farrow 13
Floor type
The effect of a sudden change in floor type on pecking behaviour in chicks 65
Genetic engineering
Genetic engineering and animal welfare 105
Gilts
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 225
Goats
Bonding of goats to sheep and cattle for protection from predators 261
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 269
Ground pecking
Effects of floor type during rearing and of beak trimming on ground pecking and feather pecking in laying hens 359
Hormonal responses
Behavioural and hormonal responses to acute surgical stress in sheep 283
Horses
The effect of body condition of horses on discrimination learning abilities 327
Housing
The use of circadian behaviour to measure adaptation of calves to changes in their environment 1
Humans
The effects of handling by humans at calving and during milking on the behaviour and milk cortisol concentrations of primiparous dairy cows 313
Ingestive behaviour
Modification of ingestive behavior due to exercise in yearling horses grazing orchardgrass 335
Learning abilities
The effect of body condition of horses on discrimination learning abilities 327
Milk ejection
Individual differences in temperament of dairy goats and the inhibition of milk ejection . 269
Milk yield
The sucking behaviour of triplet, twin and single lambs at pasture 39
Motivation
Motivation in relation to the welfare of enclosed livestock 129
Multi-sire mating
Mounting efficiencies, courtship behavior and mate preference of boars under multi-sire mating 245
Nest building
Nest site choice and nest building of free-ranging domestic pigs due to farrow 13
Oestrous trends
Incidence of oestrus and oestrous trends in lactating sows housed in different social and physical environments 235
Ostriches
Time-activity budget of ostriches (*Struthio camelus*) offered concentrate feed and maintained in outdoor pens 347

Pecking behaviour
The effect of a sudden change in floor type on pecking behaviour in chicks 65
Physical environments
Incidence of oestrus and oestrous trends in lactating sows housed in different social and physical environments 235
Piglet mortality
Nest site choice and nest building of free-ranging domestic pigs due to farrow 13
Pigs
Nest site choice and nest building of free-ranging domestic pigs due to farrow 13
Suckling and teat disputes by neonatal piglets 23
The pig: a model for discussing animal behaviour and welfare 115
Predators
Bonding of goats to sheep and cattle for protection from predators 261
Puberty
Boar-induced puberty in gilts handled pleasantly or unpleasantly during rearing 225
Ram hoggets
Effect of training ram hoggets on their adult sexual behaviour 295
Resting behaviour
Influence of supplemental lighting on the resting behaviour of fattening bulls kept in a stanchion barn 303
Sexual behaviour
Effect of training ram hoggets on their adult sexual behaviour 295
Sexual selection
Sexual selection (book review) 381
Sheep
Behavioural and hormonal responses to acute surgical stress in sheep 283
Bonding of goats to sheep and cattle for protection from predators 261
Social organization in young Merino and Merino × Border Leicester ewes 49
The sucking behaviour of triplet, twin and single lambs at pasture 39
Social behaviour
Social organization in young Merino and Merino × Border Leicester ewes 49
Social environments
Incidence of oestrus and oestrous trends in lactating sows housed in different social and physical environments 235
Social organization
Social influences on the comfort behaviour of laying hens 75
Social organization in young Merino and Merino × Border Leicester ewes 49
Stress
Behavioural and hormonal responses to acute surgical stress in sheep 283
Blood catecholamines in response to handling in normal and stress-susceptible swine 255
Suckling behaviour
Suckling and teat disputes by neonatal piglets 23
The sucking behaviour of triplet, twin and single lambs at pasture 39
Teat disputes
Suckling and teat disputes by neonatal piglets 23
Vampire bat
Case reports on defensive behaviour in equine and bovine subjects in response to vocalization of the common vampire bat (*Desmodus rotundus*) 377
Vocalization
Case reports on defensive behaviour in equine and bovine subjects in response to vocalization of the common vampire bat (*Desmodus rotundus*) 377

Welfare

Animal welfare and human welfare 95
Animal welfare practice: primary factors and objectives 159
Animal welfare theory: the keyboard of the maintenance ethosystem 177
Coping with confinement — features of the environment that influence animals' ability to adapt 139
The welfare-behaviour relationship 93
Genetic engineering and animal welfare 105
Motivation in relation to the welfare of enclosed livestock 129
Recognizing behavioral needs 151
The pig: a model for discussing animal behaviour and welfare 115